

A Division of GZA

WATER CONSTRUCTION MANAGEMENT

77 Batson Drive Manchester, CT 06042 T: 860.643.9560 F: 860 646 7169



### **NEW ENGLAND BIOASSAY A DIVISION OF GZA CHRONIC AQUATIC TOXICITY TEST REPORT**

Permitee:	Pa <sup>-</sup>	triot Beverage	S		NPDES #	MAC	0004936	
Report submitted to:	20							
	Littl	eton, MA 0146	_					
Sample ID:		Outfall 001			<b>-</b>			
Test Month/Year:	J	anuary 2019			<b>-</b> 1			
NEB Proj#	0.	5.0044697.00			<u>.</u>			
Test Type / Method: <i>Pimephales promelas</i> Modified Chronic Static-Renewal Freshwate Test Method 1000.0; EPA 821-R-02-013								
Effluent Sample Dates:	#11/13-14	1/19#2	1/1	5-16/1	.9#3	1	/17-18/19	
Test Start	Date:	1/1	4/19					
		Results Summ	ary					
Your results were as foll Passed all permit limits	ows:							
		Acute Test Res						
Species	LC50	A-NOE	C	Perr	nit Limit		Pass / Fail	
Pimephales promelas	>100%	100%	i	≥	100%		Pass	
	C	nronic Test Re	culto					
Species	C-NOEC	C-LOEC		25	Permit L	imit	Pass/Fail	
Pimephales promelas	100%	>100%		00%	≥ 91%		Pass	
Data Qualifiers affecting							1 400	
Certifications & Approvals: NH FLA								

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### **Test Report Certification**

Permittee name: _	Patriot Beverages	Permit number:	MA0004936					
Client sample ID:	Outfall 001	Test Start Date:	1/14/19					
Whole Effluent Toxicity Test Report Certification (Permittee)								
supervision in acc evaluate the informa those persons direc knowledge and b	cordance with a system designed to ation submitted. Based on my inqu ctly responsible for gathering infor belief, true, accurate, and complet	all attachments were prepared un o assure that qualified personnel prince iry of the person or persons who m mation, the information submitted e. I am aware that there are signification ity of fine and imprisonment for kn	roperly gather and lanage the system, or is, to the best of my cant penalties for					
Executed on: _	(Date)	Authorized Signature						
		Print or Type Name and Title						
		Print or Type the Permittee's Na	me					
		MA0004936	5					
		Print or Type the NPDES Permit I	Number					
Whole Ef	ffluent Toxicity Test Repor	t Certification (Bioassay Lal	poratory)					
	The results reported relate only to	the samples submitted as received	1					
supervision in acc evaluate the informa those persons direc knowledge and b	ordance with a system designed to tion submitted. Based on my inqu tly responsible for gathering inform pelief, true, accurate, and complet	all attachments were prepared unco assure that qualified personnel print of the person or persons who mation, the information submitted e. I am aware that there are significately of fine and imprisonment for known that the control of the control	roperly gather and lanage the system, or is, to the best of my cant penalties for owing violations.					

Kimberly Wills

Laboratory Manager

New England Bioassay a division of GZA

### **General Test Conditions**

Permittee name: Patriot Beverages Permit number: MA00049									
Client sample ID:	Outfall 001		Test Start Date:	1/14/19					
Sample Collection Information									
Effluent #1 Dates/Times:	1/13-14/19 @0700-073	Receiving Water	#1 Date/Time:	1/14/19 @0700					
Effluent #2 Dates/Times:	1/15-16/19 @ 0700-070	00 Receiving Water	#2 Date/Time:	1/16/19 @ 0730					
Effluent #3 Dates/Times:		00 Receiving Water	r#3 Date/Time:	1/18/19 @ 0730					
Were a minimum of three s	samples collected? Yes	✓ No □ *(see	note below)						
Were samples used within t	the first 36 hours of collection?	Yes 🗸	No □ * (see not	:e below)					
* sample collection note:									
	Test (	Conditions							
Permittee's Receiving Wate	er: Reedy Meadow Brook								
• Dilution water: <u>Labora</u>	tory synthetic soft water (hardn	ess 45 - 55 mg/L CaC	(03)						
Control water: Receiving	g water collected at a point imm	ediately upstream o	f or away from the	discharge					
Effluent concentrations test	ted: 0%, 6.25%, 12.5%, 25%	, 50%, 91%, 100%							
Was effluent salinity adjuste	ed? No 🗹 Yes 🗀	with Instant Ocean	sea salts to	ppt					
	Chlorine is measured using 450	0 CL-G DPD Colorime	etric Method						
<ul> <li>Dechlorination was not r</li> </ul>	equired								
Aeration: Did Dissolved Oxy	gen levels fall below 40% satura	ation? Yes	□ No ☑						
Test Aerated at	t <100 bubbles/minute as of:	·							
TRC results and further info	rmation about aeration of samp	oles can be found att	ached in "sample re	eceipt chemistry"					
	Reference	Toxicant Data							
Fathead minnows									
rutieda militows									
	Date:	1/2/19							
	Toxicant:	Sodium chloride							
	Dilution Water:	NEB Soft Water	_						
	Organism Source:	NEB							
	Growth IC25:	1.33 g/	<u>L</u>						
	Results within range	Yes 🗸 No 🗆	1						

### **Pimephales promelas Test Results**

Permittee name:	Patriot Beverages	ermit number:	MA0004936					
Client sample ID:	Outfall 001	Test Dates: _	1/14/19 -	1/21/19				
	Test Acceptabilit	y Criteria						
Lab Diluent Survival: Brook Control Survival:	85% Mean Lab Diluent100% Mean Brook Contr		0.52mg 0.56mg					
Thiosulfate Control Survival:  Presence of an asterisk (*) indic bottom of the following page.	NA % Mean Thiosulfate of ates EPA criteria was not met, see		NA mg esults Discussion"	section at the				
Test Results								

		Permit Limit	Test Result	Pass/Fail Status
Acuto	48 hr LC50	≥ 100%	>100%	Pass
Acute Data	48 hr NOEC	5 52	100%	
Butu	TUa			
	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
Chuania	Growth C-LOEC		>100%	
Chronic Data	Growth IC25		>100%	
Dutu	Growth IC50		>100%	, 45-10 Feb.
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc	CETT C 194		

Presence of an asterisk (\*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

Test Variability
Growth PMSD: 14.7% Upper & Lower EPA bounds: 12 - 30%
PMSD exceeds upper bounds. Test results are highly variable and may not be sensitive enough to determine
the presence of toxicity at the permit limit concentration (PLC)
$\Box$ The PMSD falls within the upper (30%) and lower (12%) bounds. Results are reportable.
$oxedsymbol{\square}$ PMSD falls below the lower bound test variability criterion. The test is very sensitive. The relative percent
difference (RPD) between the control and each treatment was calculated and compared to the lower bound.
The RPD values for all concentrations fall below the lower bound. Any differences observed in this test are considered statistically insignificant.
Some of the concentrations that were flagged as statistically significant have RPD values that fall below the lower bound. Any differences observed in these concentrations will not be considered statistically significantly decreased from the control.
No statistically significant reductions were observed in this test.

### **Pimephales promelas** Test Results

Permittee name	:	Patriot Beverag	es	Permit number:	MA0004936					
Client sample ID	:	Outfall 001	1/14/19 -	1/21/19						
Concentration - Response Evaluation										
	_	t effects at any test concen erformed very similarly to c		ntration-response cu	rve. Test					
	Growth: #12 No significant effects at any test concentration with a relatively flat concentration-response curve.  Test concentrations performed both above and below (but similarly to) the dilution control.									
			s							
The concentration	- response rela	tionship was reviewed and	the following determina	tion was made:						
Survival	Growth									
X	X	Results are reliable and re	eportable							
		Results are anomalous	(see explanation below	·)						
		Results are inconclusive -	retest (see explanation b	elow)						
		Results Discussion	on (if applicable):							

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NEB Issued: 2/6/19

# **TEST METHODS**

### Pimephales promelas

Test type: Modified Chronic Static Renewal Freshwater Test

**Test Reference Manual:** EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of

Effluents and Receiving Water to Freshwater Organisms"

**Test Method:** Pimephales promelas Survival and Growth Test - EPA 1000.0

Temperature: 25 °C ± 1°C (Temperatures should not deviate by more than 3°C during the test)

(required)

**Light Quality:** Ambient Laboratory Illumination (recommended)

**Light Intensity:** 10-20 μE/m2/s, or 50-100 ft-c (recommended)

**Photoperiod:** 16 hours light, 8 hours dark (recommended)

Test chamber size: 600 mL (500 mL is recommended minimum)

Test solution volume: 250 mL (recommended minimum)

**Renewal of Test Solutions:** Daily (required)

Age of Test Organisms: Newly hatched larvae less than 24 hours old (required)

**Number of Organisms** 

Per Test Chamber: 10 (recommended)

**Number of Replicate Test** 

Chambers Per Treatment: 4 (required minimum)

**Number of Organisms Per** 

**Test Concentration:** 

40 (required minimum)

**Feeding Regime:** Feed 0.15 g of a concentrated suspension of newly hatched brine shrimp

> nauplii twice daily, 6 h between feedings (at the beginning of the work day prior to renewal, and at the end of the work day following renewal).

Sufficient Artemia are added to provide an excess.

Cleaning: Siphoned daily, immediately before test solution renewal (required)

Aeration: None, unless DO concentration falls below 4.0 mg/L, at which point the rate

should not exceed 100 bubbles/minute. (recommended)

**Test Duration:** 7 days (required)

**Endpoints:** Survival and growth (weight) (required)

**Test Acceptability:** 80% or greater survival in controls; average dry weight per surviving organism in

control chambers equals or exceeds 0.25 mg (required)

Minimum of three samples with a maximum holding time of 36 hours before Sampling Requirements:

first use. (required)

Sample volume required: 2.5 L/Day (recommended)

# PIMEPHALES PROMELAS DATASHEETS & STATISTICAL ANALYSIS

# NEW ENGLAND BIOASSAY TOXICITY DATA FORM CHRONIC COVER SHEET

	CHR	ONIC COVER SHE	EET			
CLIENT:	Patriot Beverages		P.promelas TEST ID	# 19-75		
ADDRESS:	20 Harvard Road		CHAIN OF CUSTODY			
-	Littleton, MA 01460		NEB PROJECT			
PERMITTEE:	Patriot Beverages		SAMPLE II			
PERMIT NUMBER:	MA0004936					
DILUTION WATER:	Soft Synthetic Lab Wat	er				
		VERTEBRATES				
TEST SET-UF	P TECHNICIAN:	CW				
	TEST SPECIES: Pin	nephales promelas	_			
	NEB LOT#	Pp19(1-14)				
	AGE:	< 24 hours				
TEST SOLUTION V	OLUME (mls):	400				
ORGANISMS PER TE	ST CHAMBER:	10				
ORGANISMS PER CON	ICENTRATION:	40				
	LABORATO	DRY CONTROL WATEI	R (SRCF)  Alkalinity mg/L			
	C39-S001	48	35			
		DATE	TIME			
	TEST START:	1/14/19	4/19 1400			
	TEST END:	1/21/19	1350			
OMMENTS:						

REVIEWED BY: DATE: DATE:

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# NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME &	& ADDRESS: Patriot Beverages, 20 Harvard Road, Littleton MA 01460						60	
NEB PROJECT NUI	T NUMBER: 05.0044697.00				MBER:	19-75	COC#	C39-1123/24
TEST ORGANISM:	Pimeph	ales promelas		AGE:	<24 hours	Lot #	Рр	19(1-14)
START DATE:	1/14/19	TIME:	1400	END	DATE:	1/21/19	TIME:	1350

Effluent	Replicate	Number of Survivors									
Concentration	Number					Day				r.	
		0	1	2	3	4	5	6	7	Remarks	
	ANALYST	CW	ТВР	MM	MM	ко	ТВР	ТВР	ко		
NEDIAL	A	10	10	10	10	9	9	8	8		
NEB Lab Synthetic	В	10	10	10	10	10	10	10	10		
Diluent	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	9	8	6		
Reedy	А	10	10	10	10	10	10	10	10		
Meadow	В	10	10	10	10	10	10	10	10		
Brook	С	10	10	10	10	10	10	10	10		
Control	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	10	9	9	9	9		
6.25%	В	10	10	10	10	10	10	10	10		
0.23%	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	10	10	10	10	10		
42.50/	В	10	10	10	10	10	10	10	10		
12.5%	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	A	10	10	10	10	10	10	10	10		
250/	В	10	10	10	10	9	9	9	9		
25%	С	10	10	10	9	9	9	9	9		
	D	10	10	10	10	10	10	10	10		
	Α	10	10	10	9	9	9	9	9		
	В	10	10	10	10	10	10	10	10		
50%	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		
	А	10	10	10	10	10	10	10	10		
	В	10	10	10	10	10	10	10	10		
91%	С	10	10	10	10	10	10	10	10		
	D	10	10	10	10	10	10	10	10		

D.O. concentration fell below 4.0 mg/L	
All test solutions were aerated at <100 bubbles/minute as of	

# NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME &	ADDRESS:	Patriot Beverages, 20 Harvard Road, Littleton MA 01460					60	
NEB PROJECT NUMBER: 05.0044697.00			TEST NUI	MBER:	19-75	COC#	C39-1123-24	
TEST ORGANISM:	Pimeph	ales prome	las	AGE:	<24 hours	Lot #	Pp	19(1-14)
START DATE:	1/14/19	TIME:	1400	END (	DATE:	1/21/19	TIME:	1350

Effluent	Replicate				Nur	mber of S	urvivors			
Concentration	Number					Day				
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	CW	ТВР	MM	MM	ко	ТВР	ТВР	ко	
	Α	10	10	10	10	10	9	9	9	
100%	В	10	10	10	10	10	10	10	10	
10070	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
			÷-							
:										

# **NEW ENGLAND BIOASSAY OBSERVATION DATA FORM**

Project # 05.0044697.00 19-75 Test ID: Rep D: All organisms appear healthy and normal unless noted TBP Pimephales promelas 8 1/14/19 Technician: Technician: Rep C: 1/18/19 1/19/19 Test Species: Test Date: ш Date: Date: Rep B: Observations Observations Patriot Beverages 불 4 S Day Day Rep A: **Brook Control** Concentration **Brook Control** Lab Diluent Lab Diluent Permittee: or Dilution 6.25% 12.5% 6.25% 12.5% 100% 100% 25% 20% 91% 25% 20% 91%

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

# **NEW ENGLAND BIOASSAY OBSERVATION DATA FORM**

05.0044697.00 19-75 岁 Test ID: Project # Rep D: All organisms appear healthy and normal unless noted TBP 8 Pimephales promelas 1/14/19 Technician: **Technician**: Rep C: 1/20/19 1/21/19 Test Species: Test Date: Date: Date: Rep B: Observations Observations Patriot Beverages 9 Day Day Rep A: **Brook Control** Concentration **Brook Control** Lab Diluent Lab Diluent Permittee: or Dilution 6.25% 6.25% 12.5% 12.5% 100% 100% 91% 25% 50% 25% 20% 91%

F= fungus NF = no fungus SL = slightly lethargic L = lethargic VL = very lethargic TD = tangled in debris MT = missing test organism TE = technician error (organism accidentally killed by technician) SS = stuck in surface tension DW = dead above water line

### NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patriot	Beverages, 20 Harvard Road,	Littleton MA 01460
NEB PROJECT #	05.0044697.00	NEB TEST NUMBER:	19-75
TEST START DATE	1/14/19	- WEIGHING DATE:	1/23/19
TEST END DATE	1/21/19	-	
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	ТВР	ANALYST-FINAL WEIGHTS	ТВР
Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
	А	935.52	940.70
NED Lab Comthatia Diloant	В	938.71	944.46
NEB Lab Synthetic Diluent	С	940.30	945.78
	D	929.83	934.14
	А	930.74	936.09
Doody Moodey, Drast, Carley	В	928.28	933.62
Reedy Meadow Brook Control	С	930.16	936.14
	D	937.78	943.68
	Α	932.58	938.24
6.250	В	935.76	942.07
6.25%	С	932.12	938.42
	D	932.41	938.43
	Α	928.86	935.29
12.50/	В	924.69	930.89
12.5%	С	930.79	935.76
	D	932.33	937.53
	А	935.31	941.05
250/	В	932.73	938.65
25%	С	932.88	938.58
	D	931.74	937.92
	А	926.06	931.96
F02/	В	933.80	939.46
50%	С	932.54	938.02
	D	933.91	939.78
	A	934.78	940.31
0404	В	932.70	938.70
91%	С	931.80	937.29
	D	928.68	934.19
	A	927.06	932.28
40004	В	930.65	935.66
100%	С	931.37	935.58
	D	939.22	944.25

		Final Weight	Initial Weight	Total Weight	Average per	Mean fish	Standard
Concentration	Rep	(mg)	(mg)	(mg)	fish (mg)	weight (mg)	Deviation
NEDiah	1	940.70	935.52	5.18	0.518	0.5180	0.062498
NEB Lab	2	944.46	938.71	5.75	0.575		
Synthetic	3	945.78	940.30	5.48	0.548		
Diluent	4	934.14	929.83	4.31	0.431		
	1	936.09	930.74	5.35	0.535	0.5643	0.03450966
Reedy Meadow	2	933.62	928.28	5.34	0.534		
Brook Control	3	936.14	930.16	5.98	0.598		
	4	943.68	937.78	5.90	0.590		
	1	938.24	932.58	5.66	0.566	0.6072	0.030609095
6.250/	2	942.07	935.76	6.31	0.631		
6.25%	3	938.42	932.12	6.30	0.630		
	4	938.43	932.41	6.02	0.602		
	1	935.29	928.86	6.43	0.643	0.5700	0.072244954
12.50/	2	930.89	924.69	6.20	0.620		
12.5%	3	935.76	930.79	4.97	0.497		
	4	937.53	932.33	5.20	0.520		
	1	941.05	935.31	5.74	0.574	0.5885	0.021870833
250/	2	938.65	932.73	5.92	0.592		
25%	3	938.58	932.88	5.70	0.570		
	4	937.92	931.74	6.18	0.618		
	1	931.96	926.06	5.90	0.590	0.5728	0.019653244
F00/	2	939.46	933.80	5.66	0.566		
50%	3	938.02	932.54	5.48	0.548		
	4	939.78	933.91	5.87	0.587		
	1	940.31	934.78	5.53	0.553	0.5633	0.024554361
010/	2	938.70	932.70	6.00	0.600		
91%	3	937.29	931.80	5.49	0.549		
	4	934.19	928.68	5.51	0.551		
	1	932.28	927.06	5.22	0.522	0.4868	0.044843245
1000/	2	935.66	930.65	5.01	0.501		
100%	3	935.58	931.37	4.21	0.421		
	4	944.25	939.22	5.03	0.503		

Report Date: Test Code/ID: 24 Jan-19 14:24 (p 1 of 6)

19-75 / 00-0451-9179

Fathea	d Minn	ow 7-d Larval S	urvival and	d Growt	h Test							N	lew Englai	nd Bioassay
Analysi	is ID:	18-0978-6005	End	lpoint:	2d Survival Rate	Э					CETISV	1.9.4		
Analyze	ed:	24 Jan-19 14:23	Ana	lysis:	Linear Interpola	tion (ICPIN)	·		Statu	s Level:	:	1		
Batch I	D:	11-9293-2994	Tes	t Type:	e: Growth-Survival (7d)			Analy	st:					
Start D	ate:	14 Jan-19 14:00	Pro	tocol:	EPA/821/R-02-013 (2002)			Dilue	nt: L	.aboi	ratory Wa	ter		
Ending	Date:	21 Jan-19 13:50	Spe	cies:	Pimephales promelas E			Brine	: N	Not A	pplicable			
Test Le	ngth:	7d	Тах	on:	Actinopterygii				Sourc	e: I	n-Ho	use Cultu	re	Age: <24
Sample		11-1924-9610	Cod	ie:	42B664CA				Proje	ct:				
		14 Jan-19 07:30		erial:	WWTF Effluent				Sourc		Patrio	ot Beveraç	ges (MA00	04936)
		14 Jan-19 11:35		(PC):	D. 1.1.1.D.				Statio	n:				
Sample	Age:	/h	Clie	ent:	Patriot Beverag	es 								
Linear	Interpo	lation Options												
X Trans	sform	Y Transform			Resamples	Exp 95%		Method						
Log(X)		Linear	153	6735	200	Yes		Two-Poin	t Interpo	lation				
Point E	stimate	es												
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL								
LC50	>100	n/a	n/a	<1	n/a	n/a								
2d Surv	ival Ra	ate Summary				Calculated Variate(A/B)							Isoto	nic Variate
Conc-%	, D	Code	Count	Mean	Min	Max	Std I	Dev CV	<b>'</b> %	%Effec	t	A/B	Mean	%Effect
0		D	4	1,000		1,0000	0.000		0%	0.0%		40/40	1	0.0%
6.25			4	1.000		1.0000	0.000		0%	0.0%		40/40	1	0.0%
12.5			4	1.000		1.0000	0.000		0%	0.0%		40/40	1	0.0%
25			4	1,000		1.0000	0.000		0%	0.0%		40/40	1	0.0%
50			4	1.000		1,0000	0.000		0%	0.0%		40/40	1	0.0%
91 100			4	1.000		1.0000 1.0000	0.000		0% 0%	0.0% 0.0%		40/40 40/40	1	0.0% 0.0%
			4	1.000	0 1.0000	1,0000	0.000	0 0.0	70	0.076		40/40	186	0.0%
		ite Detail												
Conc-%	, D	Code	Rep 1	Rep 2		Rep 4								
0		D	1.0000	1.000		1.0000								
6.25			1.0000	1.000		1.0000								
12.5			1.0000	1.000		1.0000								
25			1,0000	1.000		1.0000								
50			1.0000	1.000		1.0000								
91 100			1.0000 1.0000	1.000		1.0000 1.0000								
			1.0000	1,000	1.0000	1.0000								
		ate Binomials		2 .		<u>.</u>								
Conc-%		Code	Rep 1	Rep 2		Rep 4								
		D	10/10	10/10		10/10								
			10/10	10/10		10/10								
6.25				40140	40/40									
6.25 12.5			10/10	10/10		10/10								
6.25 12.5 25			10/10 10/10	10/10	10/10	10/10								
0 6.25 12.5 25 50			10/10 10/10 10/10	10/10 10/10	10/10 10/10	10/10 10/10								
6.25 12.5 25			10/10 10/10	10/10	10/10 10/10 10/10	10/10								

000-222-335-4

CETIS™ v1.9.4.1

Analyst: \_\_\_\_ QA:\_\_\_

Report Date: Test Code/ID: 24 Jan-19 14:24 (p 2 of 6)

19-75 / 00-0451-9179

Fathead Minnow 7-d Larval Survival and Growth Test

**New England Bioassay** 

Analyzed:

Analysis ID: 18-0978-6005

Endpoint: 2d Survival Rate

**CETIS Version:** 

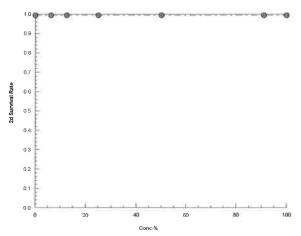
CETISv1.9.4

24 Jan-19 14:23 Analysis: Linear Interpolation (ICPIN) Status Level:

Graphics



000-222-335-4



Analyst:\_\_\_

Report Date: Test Code/ID: 24 Jan-19 14:24 (p 3 of 6) 19-75 / 00-0451-9179

								ı	est Code/IL	J;		19-7570	0-0451-917
Fathea	d Minn	ow 7-d Larval S	urvival and	l Growt	h Test						N	iew Englan	d Bioassay
Analysi		11-1187-6749		lpoint:	7d Survival Rat				ETIS Versi	- 1.00	CETISv	1.9.4	
Analyze		24 Jan-19 14:23		lysis:	Linear Interpola		N)		tatus Level	l:	1		
Batch I		11-9293-2994			Growth-Surviva				nalyst:				
Start Da		14 Jan-19 14:00		tocol:		02-013 (2002)					atory Wa	ter	
_		21 Jan-19 13:50	-	cies:	Pimephales pro	omelas					plicable		
Test Le	ngth:	7d	Tax	on:	Actinopterygii			S	ource:	In-Hou	ise Cultu	ire	Age: <24
Sample		11-1924-9610	Cod	le:	42B664CA			P	roject:				
-		14 Jan-19 07:30		erial:	WWTF Effluent	t				Patriot	Bevera	ges (MA000	4936)
-		14 Jan-19 11:35		(PC):				S	tation:				
Sample	Age:	7h 	Clie	nt:	Patriot Beverag	jes 							
Linear I	Interpo	lation Options											
X Trans	form	Y Transform			Resamples	Exp 95%		thod					
Log(X)		Linear	639	239	200	Yes	Two	o-Point Int	erpolation				
Test Ac	ceptab	ility Criteria	TAC L	imits									
Attribut		Test Stat	Lower	Uppe		Decision							
Control	Resp	0.85	0.8	>>	Yes	Passes C	Criteria						
Point E	stimate	es											
Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL	_						
LC50	>100	n/a	n/a	<1	n/a	n/a							
7d Surv	vival Ra	ate Summary				Calc	ulated Vari	iate(A/B)				Isotor	nic Variate
Conc-%		Code	Count	Mean	Min	Max	Std Dev	CV%	%Effe	ct A	NB	Mean	%Effect
0		D	4	0.850	0.6000	1.0000	0.1915	22.539	6 0.0%	3	34/40	0.9607	0.0%
6.25			4	0.975	0.9000	1.0000	0.0500	5.13%	-14.71	% 3	39/40	0.9607	0.0%
12.5			4	1.000	0 1.0000	1.0000	0.0000	0.00%	-17,65	5% 4	10/40	0.9607	0.0%
25			4	0.950	0.9000	1.0000	0.0577	6.08%	-11.76	3%	38/40	0.9607	0.0%
50			4	0.975	0.9000	1.0000	0.0500	5.13%	-14.71	% 3	39/40	0.9607	0.0%
91			4	1.000	0 1.0000	1.0000	0.0000	0.00%	-17.65	% 4	10/40	0.9607	0.0%
100			4	0.975	0.9000	1.0000	0.0500	5.13%	-14.71	% 3	39/40	0.9607	0.0%
7d Surv	ival Ra	te Detail											
Conc-%	)	Code	Rep 1	Rep 2		Rep 4							
0		D	0.8000	1.000		0.6000							
6.25			0.9000	1.0000		1.0000							
12.5			1.0000	1.0000		1.0000							
25			1.0000	0.900		1.0000							
50			0.9000	1.0000	0 1.0000	1.0000							
91			1.0000	1.0000	1,0000	1.0000							
100			0.9000	1.0000	1.0000	1.0000							
7d Surv	ival Ra	te Binomials											
Conc-%	)	Code	Rep 1	Rep 2		Rep 4							
0		D	10/10	10/10	10/10	10/10							
3.25			10/10	10/10	10/10	10/10							
12.5			10/10	10/10	10/10	10/10							
			10/10	10/10	10/10	10/10							
25			10/10	10/10	10/10	10/10							
12.5 25 50 91													

000-222-335-4

CETIS™ v1.9.4.1

Analyst:\_\_\_\_\_ QA:\_\_\_\_

Report Date:

24 Jan-19 14:24 (p 4 of 6)

Test Code/ID:

19-75 / 00-0451-9179

Fathead Minnow 7-d Larval Survival and Growth Test

**New England Bioassay** 

Analyzed:

Analysis ID: 11-1187-6749 24 Jan-19 14:23

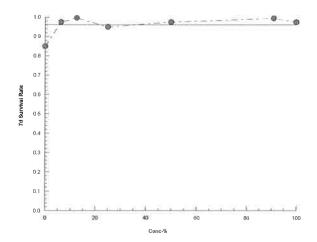
Endpoint: 7d Survival Rate Analysis:

Linear Interpolation (ICPIN)

**CETIS Version:** Status Level:

CETISv1.9.4 1

### Graphics



Analyst:\_\_ QA:\_

19 of 65

NEB Issued: 2/6/19

Report Date:

24 Jan-19 14:24 (p 5 of 6) 19-75 / 00-0451-9179

				lest Code	יטוי:	19-75	00-0451-9179
Fathead Minr	now 7-d Larval Surviv	al and Growt	h Test			New Engla	and Bioassay
Analysis ID: Analyzed:	20-3711-2696 24 Jan-19 14:24	Endpoint: Analysis:	Mean Dry Biomass-mg Linear Interpolation (ICPIN)	CETIS Ver Status Lev		TISv1.9.4	
Batch ID:	11-9293-2994	Test Type:	Growth-Survival (7d)	Analyst:			
Start Date:	14 Jan-19 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory	/ Water	
<b>Ending Date:</b>	21 Jan-19 13:50	Species:	Pimephales promelas	Brine:	Not Applic	able	
Test Length:	7d	Taxon:	Actinopterygii	Source:	In-House	Culture	Age: <24
Sample ID:	11-1924-9610	Code:	42B664CA	Project:			
Sample Date:	14 Jan-19 07:30	Material:	WWTF Effluent	Source:	Patriot Be	verages (MA0	004936)
Receipt Date:	14 Jan-19 11:35	CAS (PC):		Station:			
Sample Age:	7h	Client:	Patriot Beverages				

### **Linear Interpolation Options**

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1857674	200	Yes	Two-Point Interpolation

Test Acceptability	Test Acceptability Criteria		_imits		
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.518	0.25	>>	Yes	Passes Criteria

### **Point Estimates**

Leve	l %	95% LCL	95% UCL	TU	95% LCL	95% UCL
IC25	>100	n/a	n/a	<1	n/a	n/a
IC50	>100	n/a	n/a	<1	n/a	n/a

Mean Dry Bio	lean Dry Biomass-mg Summary				С	alculated Va	riate		Isotor	nic Variate
Conc-%	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect
0	D	4	0.518	0.431	0.575	0.0625	12.07%	0.0%	0.5713	0.0%
6.25		4	0.6072	0.566	0.631	0.03061	5.04%	-17.23%	0.5713	0.0%
12.5		4	0.57	0.497	0.643	0.07224	12.67%	-10.04%	0.5713	0.0%
25		4	0.5885	0.57	0.618	0.02187	3.72%	-13.61%	0.5713	0.0%
50		4	0.5728	0.548	0.59	0.01965	3.43%	-10.57%	0.5713	0.0%
91		4	0.5632	0.549	0.6	0.02455	4.36%	-8.74%	0.5632	1.41%
100		4	0.4868	0.421	0.522	0.04484	9.21%	6.03%	0.4868	14.8%

### Mean Dry Biomass-mg Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.518	0.575	0.548	0.431
6.25		0.566	0.631	0.63	0.602
12.5		0.643	0.62	0.497	0.52
25		0.574	0.592	0.57	0.618
50		0.59	0.566	0.548	0.587
91		0.553	0.6	0.549	0.551
100		0.522	0.501	0,421	0.503

000-222-335-4

CETIS™ v1.9.4.1

Analyst:\_\_\_\_\_ QA:\_\_\_\_

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NEB Issued: 2/6/19

Report Date: Test Code/ID:

24 Jan-19 14:24 (p 6 of 6)

19-75 / 00-0451-9179

Fathead Minnow 7-d Larval Survival and Growth Test

**New England Bioassay** 

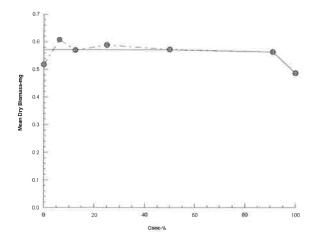
Analysis ID: Analyzed:

20-3711-2696 24 Jan-19 14:24 Endpoint: Mean Dry Biomass-mg
Analysis: Linear Interpolation (ICPIN)

CETIS Version: Status Level:

: CETISv1.9.4

Graphics



Report Date: Test Code/ID: 24 Jan-19 14:24 (p 1 of 4) 19-75 / 00-0451-9179

							Test	Code/ID:		19-75 / 0	0-0451-917
Fathead Minn	ow 7-d Larval S	urvival	and Growth	ı Test					N	ew Englan	d Bioassay
Analysis ID:	10-7186-7936		•	7d Survival Rat				IS Version		.9.4	
Analyzed:	24 Jan-19 14:23		Analysis:	Nonparametric		Freatments	State	us Level:	1		
Batch ID:	11-9293-2994			Growth-Surviva			Anal	-			
Start Date:	14 Jan-19 14:00			EPA/821/R-02-	. ,		Dilu		ooratory Wat	er	
	21 Jan-19 13:50		-	Pimephales pro	omelas		Brin		t Applicable		
Test Length:	7d		Taxon:	Actinopterygii			Soul	rce: In-l	House Cultur	re	Age: <2
Sample ID:	11-1924-9610		Code:	42B664CA			Proj	ect:			
•	14 Jan-19 07:30			WWTF Effluen	nt Source:				triot Beverag	es (MA000	4936)
•	14 Jan-19 11:35		CAS (PC):				Stati	on:			
Sample Age:	7h		Client:	Patriot Beverag	jes						
Data Transfor		Alt H					NOEL	LOEL	TOEL	TU	PMSD
Angular (Corre	ected)	C > T					100	>100	n/a	1	16.35%
Steel Many-O	ne Rank Sum Te	est									
	vs Conc-%		Test S			P-Type	P-Value	Decision	<u> </u>		
Dilution Water	6.25		21	10	2 6	Asymp	0.9831	_	ificant Effect		
	12.5		22	10	2 6	Asymp	0.9934	_	ificant Effect		
	25		20	10	2 6	Asymp	0.9616		ificant Effect		
	50		21	10	2 6	Asymp	0.9831		ificant Effect		
	91 100		22 21	10 10	2 6 2 6	Asymp Asymp	0.9934 0.9831	-	nificant Effect nificant Effect		
Toot Accomtab						, 10 J 111 P	0,000	, 10.1 O.g.			
Test Acceptab Attribute	Test Stat		C Limits r Upper	Overlap	Decision						
Control Resp	0.85	0.8	>>	Yes	Passes C	riteria					
		0.0		163	1 23363 0						
ANOVA Table				•			5.7.1		( =0()		
Source	Sum Squi 0.122318	ares	0.0203	Square	DF	F Stat 1.511	P-Value 0.2230	Decision	<u> </u>		
Between Error	0:122316				6	1.511	0.2230	Non-Sign	ificant Effect	(	
Total	0.405632		0.0134	911	21						
Distributional											
Attribute	Test				Test Stat	Critical	P-Value	Decision	(a·1%)		
Variances		nuality o	f Variance T	eet	10.34	3.812	2.3E-05		Variances		
Variances			lity of Variar		4.44	3.812	0.0047		Variances		
Distribution			ormality Tes		0.8806	0.8975	0.0041		nal Distributi	on	
7d Survival Ra	ate Summary										
Conc-%	Code	Coun	t Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	0.8500	0.5453	1.0000	0.9000	0.6000	1.0000	0.0957	22.53%	0.00%
6.25		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	-14.71%
					1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	-17.65%
12.5		4	1.0000	1,0000		1.0000				0.000/	-11.76%
		4 4	1.0000 0.9500		1.0000	0.9500	0.9000	1.0000	0.0289	6.08%	
25 50				0.8581				1.0000 1.0000	0.0289 0.0250	5.13%	-14.71%
25 50		4	0.9500	0.8581 0.8954	1.0000	0.9500	0.9000				
25 50 91		4 4	0.9500 0.9750	0.8581 0.8954 1.0000	1.0000 1.0000	0.9500 1.0000	0.9000 0.9000	1.0000	0.0250	5.13%	-14.71%
25 50 91 100	ected) Transfor	4 4 4 4	0.9500 0.9750 1.0000 0.9750	0.8581 0.8954 1.0000	1.0000 1.0000 1.0000 1.0000	0.9500 1.0000 1.0000	0.9000 0.9000 1.0000	1.0000 1.0000 1.0000	0.0250 0.0000	5.13% 0.00%	-14.71% -17.65% -14.71%
25 50 91 100 Angular (Corre Conc-%	Code	4 4 4 4 med Su	0.9500 0,9750 1.0000 0,9750 mmary	0.8581 0.8954 1.0000 0.8954	1.0000 1.0000 1.0000 1.0000	0.9500 1.0000 1.0000 1.0000 Median	0.9000 0.9000 1.0000 0.9000	1.0000 1.0000 1.0000 Max	0.0250 0.0000 0.0250 Std Err	5.13% 0.00% 5.13% CV%	-14.71% -17.65% -14.71% %Effect
25 50 91 100 <b>Angular (Corre</b> <b>Conc-%</b>	·	4 4 4 4 med Su Count	0.9500 0.9750 1.0000 0.9750 mmary Mean 1.204	0.8581 0.8954 1.0000 0.8954 95% LCL 0.7966	1.0000 1.0000 1.0000 1.0000 95% UCL	0.9500 1.0000 1.0000 1.0000 Median	0.9000 0.9000 1.0000 0.9000 Min 0.8861	1.0000 1.0000 1.0000 Max 1.412	0.0250 0.0000 0.0250 Std Err 0.1281	5.13% 0.00% 5.13% CV% 21.28%	-14.71% -17.65% -14.71% %Effect 0.00%
25 50 91 100 Angular (Corre Conc-% 0 5.25	Code	4 4 4 4 med Su Count 4 4	0.9500 0.9750 1.0000 0.9750 mmary 1.204 1.371	0.8581 0.8954 1.0000 0.8954 95% LCL 0.7966 1.242	1.0000 1.0000 1.0000 1.0000 95% UCL 1.612 1.501	0.9500 1.0000 1.0000 1.0000 Median 1.26 1.412	0.9000 0.9000 1.0000 0.9000 Min 0.8861 1.249	1.0000 1.0000 1.0000 Max 1.412 1.412	0.0250 0.0000 0.0250 Std Err 0.1281 0.04074	5.13% 0.00% 5.13% CV% 21.28% 5.94%	-14.71% -17.65% -14.71% <b>%Effect</b> 0.00% -13.86%
25 50 91 100 <b>Angular (Corre</b> Conc-% 0 5,25 12.5	Code	4 4 4 4 med Su Count 4 4	0.9500 0.9750 1.0000 0.9750 mmary Mean 1.204 1.371 1.412	0.8581 0.8954 1.0000 0.8954 95% LCL 0.7966 1.242 1.412	1.0000 1.0000 1.0000 1.0000 95% UCL 1.612 1.501 1.412	0.9500 1.0000 1.0000 1.0000 Median 1.26 1.412 1.412	0.9000 0.9000 1.0000 0.9000 Min 0.8861 1.249 1.412	1.0000 1.0000 1.0000 Max 1.412 1.412 1.412	0.0250 0.0000 0.0250 Std Err 0.1281 0.04074 0	5.13% 0.00% 5.13% <b>CV%</b> 21.28% 5.94% 0.00%	-14.71% -17.65% -14.71% <b>%Effect</b> 0.00% -13.86% -17.25%
25 50 91 100 <b>Angular (Corre</b> Conc-% 0 3,25 12.5	Code	4 4 4 4 med Su Count 4 4	0.9500 0.9750 1.0000 0.9750 mmary 1.204 1.371 1.412 1.331	0.8581 0.8954 1.0000 0.8954 95% LCL 0.7966 1.242 1.412 1.181	1.0000 1.0000 1.0000 1.0000 95% UCL 1.612 1.501 1.412 1.48	0.9500 1.0000 1.0000 1.0000 Median 1.26 1.412 1.412 1.331	0.9000 0.9000 1.0000 0.9000 Min 0.8861 1.249 1.412 1.249	1.0000 1.0000 1.0000 Max 1.412 1.412 1.412 1.412	0.0250 0.0000 0.0250 Std Err 0.1281 0.04074 0 0.04705	5.13% 0.00% 5.13% CV% 21.28% 5.94% 0.00% 7.07%	-14.71% -17.65% -14.71% <b>%Effect</b> 0.00% -13.86% -17.25% -10.48%
25 50 91 100 <b>Angular (Corre</b> <b>Conc-%</b> 0 6.25 12.5 25	Code	4 4 4 4 med Su Count 4 4 4 4 4	0.9500 0.9750 1.0000 0.9750 mmary 1.204 1.371 1.412 1.331 1.371	0.8581 0.8954 1.0000 0.8954 95% LCL 0.7966 1.242 1.412 1.181 1.242	1.0000 1.0000 1.0000 1.0000 95% UCL 1.612 1.501 1.412 1.48 1.501	0.9500 1.0000 1.0000 1.0000 Median 1.26 1.412 1.412 1.331 1.412	0.9000 0.9000 1.0000 0.9000 Min 0.8861 1.249 1.412 1.249 1.249	1.0000 1.0000 1.0000 Max 1.412 1.412 1.412 1.412 1.412	0.0250 0.0000 0.0250 Std Err 0.1281 0.04074 0 0.04705 0.04074	5.13% 0.00% 5.13% CV% 21.28% 5.94% 0.00% 7.07% 5.94%	-14.71% -17.65% -14.71% <b>%Effect</b> 0.00% -13.86% -17.25% -10.48% -13.86%
12.5 25 50 91 100  Angular (Corre  Conc-% 0 6.25 12.5 25 50 91	Code	4 4 4 4 med Su Count 4 4	0.9500 0.9750 1.0000 0.9750 mmary 1.204 1.371 1.412 1.331	0.8581 0.8954 1.0000 0.8954 95% LCL 0.7966 1.242 1.412 1.181	1.0000 1.0000 1.0000 1.0000 95% UCL 1.612 1.501 1.412 1.48	0.9500 1.0000 1.0000 1.0000 Median 1.26 1.412 1.412 1.331	0.9000 0.9000 1.0000 0.9000 Min 0.8861 1.249 1.412 1.249	1.0000 1.0000 1.0000 Max 1.412 1.412 1.412 1.412	0.0250 0.0000 0.0250 Std Err 0.1281 0.04074 0 0.04705	5.13% 0.00% 5.13% CV% 21.28% 5.94% 0.00% 7.07%	-14.71% -17.65% -14.71% <b>%Effect</b> 0.00% -13.86% -17.25% -10.48%

Report Date: Test Code/ID: 24 Jan-19 14:24 (p 2 of 4) 19-75 / 00-0451-9179

Fathead Minnow 7-d Larval Survival and Growth Test **New England Bioassay** 

Analysis ID: 10-7186-7936 Analyzed: 24 Jan-19 14:23 Endpoint: 7d Survival Rate

Analysis:

**CETIS Version:** Status Level:

CETISv1.9.4 1

7d Surviva	I Rate Detail
------------	---------------

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0,8000	1.0000	1,0000	0.6000
6.25		0,9000	1.0000	1,0000	1.0000
12.5		1,0000	1,0000	1.0000	1,0000
25		1.0000	0.9000	0.9000	1.0000
50		0.9000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		0.9000	1.0000	1.0000	1.0000

Nonparametric-Control vs Treatments

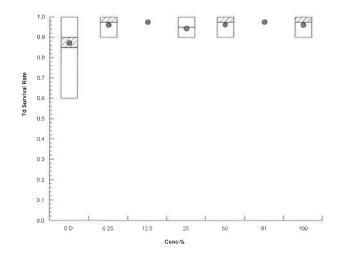
### Angular (Corrected) Transformed Detail

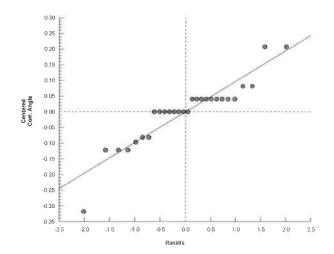
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.107	1.412	1.412	0.8861
6.25		1.249	1.412	1.412	1,412
12.5		1,412	1.412	1.412	1,412
25		1.412	1.249	1.249	1,412
50		1.249	1,412	1,412	1.412
91		1.412	1.412	1.412	1.412
100		1,249	1.412	1,412	1,412

### 7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	8/10	10/10	10/10	6/10
6.25		9/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	9/10	9/10	10/10
50		9/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		9/10	10/10	10/10	10/10

### **Graphics**





000-222-335-4

CETIS™ v1.9.4.1

Analyst:\_ QA:

Report Date: Test Code/ID: 24 Jan-19 14:24 (p 3 of 4) 19-75 / 00-0451-9179

Fathead Minnov	v 7-d Larval S	urvival aı	nd Growth 1	Test					Ne	w Englan	d Bioassa
	0-0220-1121		•	ean Dry Biom	_		CET	IS Version	: CETISv1	9.4	
Analyzed: 24	4 Jan-19 14:23	Ar Ar	nalysis: P	arametric-Co	ntrol vs Trea	tments	State	us Level:	1		
Batch ID: 1	1-9293-2994	Te	• •	rowth-Surviva			Anal	yst:			
	4 Jan-19 14:00			PA/821/R-02-			Dilue	ent: Lat	poratory Wate	er	
Ending Date: 2		-		imephales pro	omelas		Brin		t Applicable		
Test Length: 70	d 	Ta	ixon: A	ctinopterygii			Soul	rce: In-l	House Culture	e 	Age: <2
•	I-1924-9610			2B664CA			Proje		=		
Sample Date: 14				WTF Effluent	t		Soul		triot Beverage	es (MA000	4936)
Receipt Date: 14			AS (PC):	ntriot Bayaraa			Stati	on:			
Sample Age: 7h	<u> </u>	CI	ient: Pa	atriot Beverag	jes ————						
Data Transform		Alt Hyp	Ĉ				NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T					100	>100	n/a	1	14.70%
Dunnett Multiple	Comparison	Test									
Control vs	Conc-%		Test Sta	t Critical	MSD DF	P-Type	P-Value	Decision	η(α:5%)		
Dilution Water	6.25		-2.87	2.448	0,076 6	CDF	1,0000	Non-Sign	nificant Effect		
	12.5		-1.672	2.448	0.076 6	CDF	0.9984	-	nificant Effect		
	25		-2.267	2.448	0.076 6	CDF	0.9998		ificant Effect		
	50		-1.761	2.448	0.076 6	CDF	0.9988	_	nificant Effect		
	91 100		-1.455	2.448	0.076 6	CDF CDF	0.9968 0.4516	_	ificant Effect		
	100		1.005	2,448	0.076 6	CDF	0.4516	Non-Sign	nificant Effect		
Test Acceptabili	ty Criteria	TAC	Limits								
Attribute	Test Stat	Lower	Upper	Overlap	Decision						
Control Resp	0.518	0.25	>>	Yes	Passes Ci	riteria					
ANOVA Table											
	Sum Squa	ares	Mean Sc	quare	DF	F Stat	P-Value	Decision	n(α:5%)		
Source	Sum Squa 0.0416857		<b>Mean Sc</b> 0.006947		<b>DF</b> 6	F Stat 3,592	<b>P-Value</b> 0.0131	<b>Decision</b> Significar	<u> </u>		
<b>Source</b> Between Error	0.0416857 0.0406218			76	6 21				<u> </u>		
ANOVA Table Source Between Error Total	0.0416857		0.006947	76	6				<u> </u>		
Between Error	0.0416857 0.0406218 0.0823075		0.006947	76	6 21 27	3,592		Significar	nt Effect		
Source Between Error Total Distributional Te	0.0416857 0.0406218 0.0823075 ests Test		0.006947 0.001934	76 44	6 21 27 Test Stat	3,592 Critical	0.0131 P-Value	Significar	nt Effect		
Source Between Error Total Distributional Te Attribute Variances	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq	uality of V	0.006947 0.001934 /ariance Tes	76 44	6 21 27 <b>Test Stat</b> 8.425	3,592 	0.0131 P-Value 0.2086	Significar  Decision  Equal Va	nt Effect n(α:1%) riances		
Source Between Error Total  Distributional Te Attribute Variances Distribution	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V	0.006947 0.001934	76 44	6 21 27 Test Stat	3,592 Critical	0.0131 P-Value	Significar  Decision  Equal Va	nt Effect		
Source Between Error Total Distributional Te Attribute Variances Distribution Mean Dry Bioma	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor <b>ary</b>	0.006947 0.001934 Variance Tes mality Test	76 14	6 21 27 <b>Test Stat</b> 8.425 0.9734	3,592 	0.0131 P-Value 0.2086 0.6747	Decision Equal Va Normal D	nt Effect  n(α:1%)  riances  bistribution		
Source Between Error Total Distributional Te Attribute Variances Distribution Mean Dry Bioma Conc-%	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count	0.006947 0.001934 Variance Tes mality Test	76 14 t 95% LCL	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b>	3,592  Critical 16.81 0.8975	0.0131  P-Value 0.2086 0.6747  Min	Decision Equal Va Normal D	nt Effect  n(α:1%) riances Distribution  Std Err	CV%	
Source Between Error Total Distributional Te Attribute Variances Distribution Mean Dry Bioma Conc-%	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count	0.006947 0.001934 Variance Tes mality Test Mean 0.518	76 14 t 95% LCL 0.4186	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175	3,592  Critical 16.81 0.8975  Median 0.533	0.0131  P-Value 0.2086 0.6747  Min 0.431	Decision Equal Va Normal D	nt Effect  (α:1%) riances Distribution  Std Err  0.03125	12.07%	0.00%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6,25	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072	95% LCL 0.4186 0.5585	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656	3,592 Critical 16.81 0.8975 Median 0.533 0.616	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566	Decision Equal Va Normal D Max 0.575 0.631	riances Distribution  Std Err 0.03125 0.0153	12.07% 5.04%	0.00% -17.23%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6.25	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57	95% LCL 0.4186 0.5585 0.455	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497	Decision Equal Va Normal D Max 0.575 0.631 0.643	riances Distribution  Std Err 0.03125 0.0153 0.03612	12.07% 5.04% 12.67%	0.00% -17.23% -10.04%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6,25 12,5 25	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072	95% LCL 0.4186 0.5585	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656	3,592 Critical 16.81 0.8975 Median 0.533 0.616	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566	Decision Equal Va Normal D Max 0.575 0.631	riances Distribution  Std Err 0.03125 0.0153	12.07% 5.04%	0.00% -17.23% -10.04% -13.61%
Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6,25 12.5 25 50	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count 4 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885	95% LCL 0.4186 0.5585 0.455 0.5537	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685 0.6233	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57	Decision Equal Va Normal D Max 0.575 0.631 0.643 0.618	i(α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094	12.07% 5.04% 12.67% 3.72%	0.00% -17.23% -10.04% -13.61%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 91	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W	uality of V ilk W Nor ary Count 4 4 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685 0.6233 0.604	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548	Decision Equal Va Normal D  Max  0.575  0.631  0.643  0.618  0.59	nt Effect  n(α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827	12.07% 5.04% 12.67% 3.72% 3.43%	0.00% -17.23% -10.04% -13.61% -10.57%
Source Between Error Total  Distributional Te Attribute  Variances Distribution  Mean Dry Bioma  Conc-% 0 6,25 12.5 25 50 91 100	0.0416857 0.0406218 0.0823075 ests  Test  Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of V ilk W Nor ary Count 4 4 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685 0.6233 0.604 0.6023	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 91 100  Mean Dry Bioma	0.0416857 0.0406218 0.0823075 ests  Test  Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of V ilk W Nor ary Count 4 4 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685 0.6233 0.604 0.6023	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 91 100  Mean Dry Bioma Conc-% 0 O Conc-%	0.0416857 0.0406218 0.0823075 ests Test Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of Vilk W Nor ary Count 4 4 4 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632 0.4868 Rep 2	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242 0.4154	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.623 0.604 0.6023 0.5581	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 63.25 12.5 25 50 91 100  Mean Dry Bioma Conc-% 0 63.25	0.0416857 0.0406218 0.0823075 ests  Test Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of Vilk W Nor ary Count 4 4 4 4 4 4 4 4	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632 0.4868 Rep 2 0.575 0.631	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242 0.4154	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685 0.6233 0.604 0.6023 0.5581	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6,25 12.5 25 50 91 100  Mean Dry Bioma Conc-% 0 6,25 12.5 25 50 91 100	0.0416857 0.0406218 0.0823075 ests  Test Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of Vilk W Nor  ary  Count 4 4 4 4 4 4 7 0.518	0.006947 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632 0.4868 Rep 2	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242 0.4154 Rep 3 0.548	6 21 27 Test Stat 8.425 0.9734 95% UCL 0.6175 0.656 0.685 0.6233 0.604 0.6023 0.5581 Rep 4 0.431	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Source Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6,25 12.5 25 50 91 100  Mean Dry Bioma Conc-% 0 6,25 12.5 25 25 25 25 25 25 25 25 25 25 25 25 25	0.0416857 0.0406218 0.0823075 ests  Test Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of Vilk W Nor  ary  Count  4  4  4  4  4  0.518  0.566  0.643  0.574	0.006947 0.001934 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632 0.4868 Rep 2 0.575 0.631 0.62 0.592	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242 0.4154 Rep 3 0.548 0.63	6 21 27 Test Stat 8.425 0.9734 95% UCL 0.6175 0.656 0.685 0.6233 0.604 0.6023 0.5581 Rep 4 0.431 0.602	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Between Error Total  Distributional Te Attribute Variances Distribution  Mean Dry Bioma Conc-% 0 6.25 12.5 25 50 91 100  Mean Dry Bioma Conc-% 0 6.25 12.5 50 91 100	0.0416857 0.0406218 0.0823075 ests  Test Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of Vilk W Nor ary Count 4 4 4 4 4 0.518 0.566 0.643 0.574 0.59	0.006947 0.001934 Variance Tes mality Test  Mean  0.518 0.6072 0.57 0.5885 0.5728 0.5632 0.4868  Rep 2 0.575 0.631 0.62 0.592 0.566	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242 0.4154  Rep 3 0.548 0.63 0.497 0.57 0.548	6 21 27 <b>Test Stat</b> 8.425 0.9734 <b>95% UCL</b> 0.6175 0.656 0.685 0.6233 0.604 0.6023 0.5581 <b>Rep 4</b> 0.431 0.602 0.52 0.618 0.587	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	nt Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	0.00% -17.23% -10.04% -13.61% -10.57% -8.74%
Source Between Error Total	0.0416857 0.0406218 0.0823075 ests  Test Bartlett Eq Shapiro-W ess-mg Summ Code D	uality of Vilk W Nor  ary  Count  4  4  4  4  4  0.518  0.566  0.643  0.574	0.006947 0.001934 0.001934 Variance Tes mality Test Mean 0.518 0.6072 0.57 0.5885 0.5728 0.5632 0.4868 Rep 2 0.575 0.631 0.62 0.592	95% LCL 0.4186 0.5585 0.455 0.5537 0.5415 0.5242 0.4154  Rep 3 0.548 0.63 0.497 0.57	6 21 27 Test Stat 8.425 0.9734 95% UCL 0.6175 0.656 0.685 0.6233 0.604 0.6023 0.5581 Rep 4 0.431 0.602 0.52 0.618	3,592 Critical 16.81 0.8975 Median 0.533 0.616 0.57 0.583 0.5765 0.552	0.0131  P-Value 0.2086 0.6747  Min 0.431 0.566 0.497 0.57 0.548 0.549	Decision Equal Va Normal D  Max  0.575 0.631 0.643 0.618 0.59 0.6	int Effect  (α:1%) riances Distribution  Std Err  0.03125 0.0153 0.03612 0.01094 0.009827 0.01228	12.07% 5.04% 12.67% 3.72% 3.43% 4.36%	-17.23% -10.04% -13.61% -10.57% -8.74%

000-222-335-4

CETIS™ v1.9.4.1

Analyst:\_\_\_\_\_ QA:\_\_\_\_

Report Date: Test Code/ID:

24 Jan-19 14:24 (p 4 of 4) 19-75 / 00-0451-9179

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID: 10-0 Analyzed: 24 C

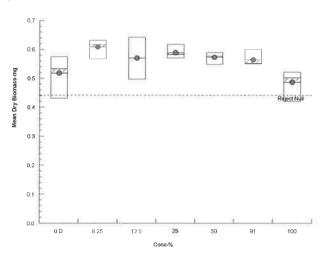
10-0220-1121 24 Jan-19 14:23 **Endpoint:** Mean Dry Biomass-mg **Analysis:** Parametric-Control vs Treatments

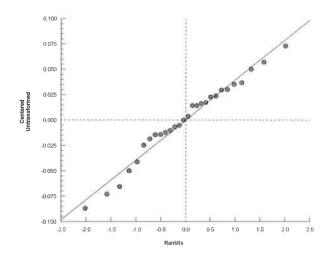
CETIS Version:

CETISv1.9.4

Status Level: 1

**Graphics** 





### NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDI					d, Littleton N		Disco	
NEB PROJECT NUMBER DILUTION WATER SOUI			5.0044697.0 ynthetic Lab		TEST ORGA			phales promelas TIME: 1400
ANALYST	MM	CH	MM	MM	PD	MM	MM	THIVIE: 1400
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.8	24.0	25.2	25.7	25.6	25.1	25.8	
D.O. mg/L Initial	8.1	9.0	8.3	8.2	8.2	8.2	7.9	
pH s.u. Initial	7.7	7.2	7.2	7.8	7.8	7.2	7.4	
Conductivity µS Initial	182	182	185	184	183	185	186	
「emp °C Final	25.2	24.8	24.6	24.7	24.9	24.9	25.4	
D.O. mg/L Final	7.8	7.2	7.4	7.5	7.3	7.1	7.0	
oH s.u. Final	7.1	7.1	7.2	7.6	7.8	7.1	7.3	
Conductivity µS Final	190	186	188	187	191	192	188	
Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.6	26.0	24.5	24.4	25.4	24.6	25.3	
D.O. mg/L Initial	9.2	9.2	9.8	9.4	8.8	9.5	8.8	
oH s.u.a Initial	6.6	6.8	6.7	6.8	7.3	6.5	6.6	
Conductivity µS Initial	193	194	188	187	186	187	188	
Temp °C Final	25.1	24.6	24.2	24.4	24.7	24.6	25.1	
D.O. mg/L Final	7.7	7.0	8.2	7.7	7.3	7.1	7.1	
oH s.u. Final	6.9	7.1	7.2	7.4	7.4	7.0	7.1	
Conductivity µS Final	204	200	195	192	195	195	191	
6.25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.3	24.0	25.2	25.7	25.7	25.3	25.5	
D.O. mg/L Initial	8.3	9.0	8.3	8.3	8.2	8.3	8.0	
oH s₌u. Initial	8.2	8.0	8.3	8.3	8.4	8.2	8.3	
Conductivity µS Initial	329	324	330	340	346	349	349	
Temp °C Final	25.6	25.3	24.9	24.8	25.0	24.5	25.0	
D.O. mg/L Final	7.6	6.6	7.3	7.2	7.4	7.3	7.7	
oH s.u. Final	7.6	7.4	7.7	7.9	7.8	8.0	7.7	
Conductivity µS Final	331	328	333	342	354	359	352	
12.5%	1	2	3	4	5	6	7	Remarks
emp °C Initial	25.4	24.0	25.1	25.8	25.7	25.1	25.4	
O.O. mg/L Initial	8.3	9.0	8.3	8.3	8.2	8.3	8.0	
H s.u. Initial	8.3	8.2	8.5	8.5	8.6	8.4	8.5	
Conductivity µS Initial	476	471	505	498	501	498	498	
emp °C Final	25.1	25.4	24.9	25.3	24.9	24.5	24.2	
0.0. mg/L Final	7.7	6.9	7.3	7.3	7.4	7.4	7.4	
H s.u. Final	8.0	7.9	8.2	8.4	8.2	8.3	8.2	
Conductivity µS Final	480	476	510	504	516	515	507	

### **NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS**

FACILITY NAME & ADD	RESS:	Patriot Bev	erages, 20 F	larvard Roa	d, Littleton N	ЛА 01460		
NEB PROJECT NUMBER			5.0044697.0		TEST ORGA			phales promelas
DILUTION WATER SOU	RCE:	Soft S	ynthetic Lab	Water	START DAT	E:	1/14/19	TIME: 1400
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.1	24.0	25.0	25.8	26.0	25.1	25.4	
D.O. mg/L Initial	8.6	9.1	8.7	8.5	8.2	8.5	8.2	
pH s.u. Initial	8.4	8.4	8.6	8.6	8.7	8.5	8.6	
Conductivity µS Initial	757	769	784	781	785	809	789	
Temp °C Final	24.9	25.5	24.7	25.1	24.8	24.3	24.1	
D.O. mg/L Final	7.7	6.5	7.3	7.5	7.5	7.4	7.5	
pH s.u. Final	8.3	8.2	8.5	8.6	8.5	8.6	8.5	
Conductivity µS Final	754	774	792	789	808	834	814	
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.0	24.0	25.0	25.8	26.0	25.2	25.3	
D.O. mg/L Initial	9.2	9.3	9.1	8.8	8.3	8.9	8.4	
pH s.u. Initial	8.5	8.5	8.6	8.6	8.7	8.5	8.6	
Conductivity µS Initial	1,329	1,337	1,375	1,393	1,388	1,406	1,408	
Temp °C Final	25.0	25.5	24.9	25.1	24.8	24.4	24.0	
D.O. mg/L Final	7.9	6.5	7.3	7.4	7.5	7.1	7.4	
pH s.u. Final	8.5	8.4	8.7	8.8	8.7	8.7	8.7	
Conductivity µS Final	1,310	1,343	1,381	1,397	1,419	1,442	1,431	
91%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	24.6	24.5	24.5	25.8	26.0	24.9	24.9	
D.O. mg/L Initial	10.1	9.6	10.2	9.3	8.5	9.8	8.8	
pH s.u. Initial	8.5	8.5	8.6	8.6	8.7	8.5	8.5	
Conductivity µS Initial	2,216	2,222	2,330	2,318	2,285	2,351	2,346	
Temp °C Final	25.4	24.8	24.7	25.4	24.9	24.3	25.0	
D.O. mg/L Final	7.7	7.2	7.2	7.3	7.3	7.2	7.0	
oH s.u. Final	8.6	8.7	8.8	8.9	8.8	8.8	8.8	
Conductivity µS Final	2,174	2,236	2,350	223	2,338	2,385	2,355	
100%	1	2	3	4	5	6	7	Remarks
emp °C Initial	24.0	24.7	24.5	25.8	26.0	24.3	24.6	
D.O. mg/L Initial	11.1	10.2	11.3	10.0	8.8	10.7	9.5	
oH s.u. Initial	8.5	8.5	8.6	8.6	8.7	8.5	8.5	
Conductivity µS Initial	2,416	2,423	2,519	2,506	2,503	2,561	2,565	
Temp °C Final	25.7	25.2	24.8	25.3	25.0	24.9	25.4	
0.0. mg/L Final	8.0	7.2	7.5	7.4	7.4	7.2	7.2	
oH s.u. Final	8.6	8.7	8.8	8.9	8.8	8.8	8.8	
Conductivity µS Final	2,385	2,426	2,532	2,516	2,546	2,591	2,560	

Tak	ole o	f Ra	ındo	m Po	ermuta	tion	s of	16				P.p	rom	elas	Test ID	#	1	L9-7	5
7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10	6	1	8	10
13 3	3 1	8 4	16 5	7 14	10 13	11 3	10 14	13 9	5 13	11 13	7 2	13 9	16 15	7 6	7	5 8	13 4	2 5	14
11	8	16	14	15	6	2	6	2	16	8	5	12	3	9	2 13	4	3	10	8 4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15	13	11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10 12	15 10	2 7	1 12	13 9	12 11	16 9	3 8	4 12	8 14	10 15	1 4	15 11	5 8	14 16	12 8	14 9	12 14	3 14	2 1
15	7	5	2	10	7	8	12	6	15	6	13	16	12	15	4	11	8	12	6
16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14	16	5	13	5
9	13	14	3	6	4	10	11	5	12	9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1 5	5 4	12 3	11 9	16 12	16 1	5 6	4 1	14 15	9	16 2	11 6	1 4	2 11	10 2	5 11	1 3	15 7	7 11	13
Э	4	5	_	Conc	1	O	Reps		11	2	O	4	11	2	11	3	,	11	16
11	8	16	5	5	13	1	13	2	16	14	12	9	8	7	5	13	3	13	3
2	2	8	8	14	16	4	3	8	11	10	14	15	1	2	11	4	5	15	9
6	13	2	13	6	5	9	15	11	10	12	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12	3	3	12	14	15	13	6	4	1	16
8 9	6 15	3 12	9 10	4 3	10 2	6 12	4 6	16 1	2 15	2 4	9 13	8 7	16 7	4 9	6 12	5 14	15 8	7 8	8 11
3	10	11	12	13	12	5	11	7	8	9	5	14	11	10	1	3	13	3	5
16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	1	14	4
1	14	14	2	9	15	16	14	6	14	7	8	3	13	11	8	7	7	12	7
4	4	6	4	12	3	11	8	15	9	8	1	13	6	3	3	15	9	9	12
15 5	5 3	1 5	11 6	10 7	6 7	3 13	7 2	10 14	5 3	5 16	11 4	10 5	10 5	12 13	15 4	16 9	14 16	5 2	2 6
12	3 7	15	15	, 15	9	8	12	12	13	15	10	1	4	6	16	2	6	11	1
10	11	10	3	2	4	2	1	4	6	6	7	11	9	14	10	8	11	4	13
7	9	7	7	11	1	7	16	13	1	13	2	4	2	1	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14	1	10	6	10
1	6	7	4	8	6	5	2	8	15	4	6	6	1	4	5	7	13	2	10
9	15	11	3	11	15	9	10	1	3	8	2	15	7	9	8	16	1	14	3
10	16	4	5	12	9	16	11	7	1	7	16	11	8	3	3	12	2	3	4
4	14	1	9	5	5	4	13	6	8	15	5	12	5	7	16	5	11	8	1
7 16	3 11	13 2	14 1	15 14	2 16	1 6	14 9	16 3	5 4	14 16	9 14	2	16 15	1 11	12 11	6 3	14 9	4 12	13 5
3	10	16	16	13	7	13	1	11	14	9	10	16	2	10	2	10	7	10	16
11	13	9	13	4	13	8	3	5	13	10	12	5	12	5	14	13	16	5	6
15	2	3	12	9	12	2	4	13	10	3	13	14	4	2	1	14	8	6	12
14	1	14	6	10	1	3	12	4	2	2	4	13	3	16	9	9	3	7	14
13 12	12 5	5 10	11 7	3 2	11 14	15 7	8 15	2 14	7	11 13	7 1	8	14 10	6	4	4	4	15 9	11
8	9	8	10	6	4	11	7	10	16 11	6	8	9 4	9	12 8	10 15	11 8	10 6	11	8 9
2	7	6	2	1	8	10	6	15	12	1	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	12	3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2
13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
5	14	4	6	8	2	15	1	13	14	16	4	15	4	3	12	12	1	4	7
2	2	2	15	14	16	9	12	16	6	10	15	14	9	10	1	14	8	8	16
7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
6 14	9 5	7 16	14 7	9 10	14 8	10 11	11 8	15 14	11 13	12 7	1 11	12 6	12 3	14 11	16 4	3 4	11 6	11 6	8 9
15	11	8	9	7	12	8	7	14	15	9	3	3	3 7	13	11	10	4	5	1
11	6	6	1	4	1	3	16	12	5	4	9	13	13	6	8	15	9	1	14
4	10	3	16	2	11	7	9	6	9	1	8	4	11	5	2	16	10	12	4
1	8	1	13	1	15	4	4	11	4	2	16	5	8	1	9	5	12	16	6
9 12	7 1	14 9	2 10	6 15	4 5	14 2	10 15	9 10	8 2	15 14	10 2	7 8	10 2	9 4	10 13	6 g	14 5	10 15	11 5
3	3	9 12	11	15 5	9	6	6	10 3	10	13	12	9	6	2	15	8 7	5 15	7	5 13
10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8	13	13	3	3	10	13	2	4	1	8	6	11	14	15	6	9	16	2	2
16	16	5	12	11	6	1	3	8	16	3	7	2	5	16	14	13	7	14	15

28 of 65

# **CHEMICAL ANALYSIS**

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.



Friday, January 18, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES

SDG ID: GCC28401

Sample ID#s: CC28401 - CC28404

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis/Shiller

**Laboratory Director** 

**NELAC - #NY11301** 

CT Lab Registration #PH-0618

MA Lab Registration #M-CT007

ME Lab Registration #CT-007

NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003 NY Lab Registration #11301

PA Lab Registration #68-03530

RI Lab Registration #63

UT Lab Registration #CT00007

VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823

Page 1 of 11



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

## Sample Id Cross Reference

January 18, 2019

SDG I.D.: GCC28401

Project ID:

**PATRIOT BEVERAGES** 

Client Id	Lab Id	Matrix
EFFLUENT-1 C39-1123	CC28401	WASTE WATER
RECEIVING WATER-1 C39-1124	CC28402	WASTE WATER
EFFLUENT GRAB-1	CC28403	WASTE WATER
SRCF LAB WATER C39-1125	CC28404	WASTE WATER



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

### **Analysis Report**

January 18, 2019

FOR:

Custody Information

Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive Manchester, CT 06040

Sample Information

Matrix:

**WASTE WATER** 

Location Code:

**NEB** 

Rush Request:

Standard

22403

Collected by: Received by:

SW

01/14/19 01/14/19

<u>Date</u>

7:30

<u>Time</u>

15:06

Analyzed by:

see "By" below

Laboratory Data

SDG ID: GCC28401

Phoenix ID: CC28401

Project ID: Client ID:

P.O.#:

PATRIOT BEVERAGES

EFFLUENT-1 C39-1123

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Aluminum	0.022	0.005	mg/L	1	01/16/19	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	01/16/19	RS	SM3113B
Copper	0.0019	0.0010	mg/L	1	01/16/19	CPP	E200.7
Hardness (CaCO3)	108	0.1	mg/L	1	01/18/19		E200.7
Nickel	0.006	0.001	mg/L	1	01/16/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	01/16/19	RS	SM3113B
Zinc	0.018	0.002	mg/L	1	01/16/19	CPP	E200.7
Alkalinity-CaCO3	1130	5.00	mg/L	1	01/15/19	RR/EG	SM2320B-11
Conductivity	2220	5.00	umhos/cm	1	01/15/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/15/19	KDB	E350.1
Tot. Diss. Solids	1500	20	mg/L	2	01/15/19	MM/DA	SM2540C-11
Tot. Org. Carbon	4.9	0.50	mg/L	1	01/15/19	RWR	SM5310B-11
Total Solids	1500	20	mg/L	2	01/15/19	MM/DA	SM2540B-11
Total Metals Digestion	Completed				01/15/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

### **Comments:**

If there are any questions regarding this data, please call Phoenix Client Services. This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

January 18, 2019

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

**Analysis Report** 

January 18, 2019

FOR:

Attn: Ms. Kim Wills

New England Bioassay a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

WASTE WATER

<u>Time</u>

Location Code:

Matrix:

P.O.#:

NEB

Collected by:

Custody Information

01/14/19

7:00

Localion Code.

NEB

Received by:

SW

01/14/19

**Date** 

15:06

Rush Request:

Standard

Analyzed by:

see "By" below

SDG ID: GCC28401

22403

**Laboratory Data** 

Phoenix ID: CC28402

Project ID:

PATRIOT BEVERAGES

Client ID:

**RECEIVING WATER-1 C39-1124** 

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Aluminum	0.098	0.005	mg/L	1	01/16/19	TH	E200.7
Cadmium	< 0.0001	0.0001	mg/L	1	01/16/19	RS	SM3113B
Copper	0.0011	0.0010	mg/L	1	01/16/19	CPP	E200.7
Hardness (CaCO3)	35.3	0.1	mg/L	1	01/18/19		E200.7
Nickel	0.002	0.001	mg/L	1	01/16/19	CPP	E200.7
Lead	< 0.0003	0.0003	mg/L	1	01/16/19	RS	SM3113B
Zinc	0.006	0.002	mg/L	1	01/16/19	CPP	E200.7
Alkalinity-CaCO3	24.2	5.00	mg/L	1	01/15/19	RR/EG	SM2320B-11
Conductivity	191	5.00	umhos/cm	1	01/15/19	RR/EG	SM2510B-11
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/15/19	KDB	E350.1
pH	7.01	1.00	pH Units	1	01/15/19 03:52	RR/EG	SM4500-H B-11
Tot. Org. Carbon	4.83	0.50	mg/L	1	01/15/19	RWR	SM5310B-11
Total Metals Digestion	Completed				01/15/19	AG	

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

### **Comments:**

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

January 18, 2019

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

**Analysis Report** 

January 18, 2019

FOR:

Attn: Ms. Kim Wills New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive Manchester, CT 06040

Sample Information

WASTE WATER

**Custody Information** Collected by:

<u>Date</u>

Time

Matrix: **Location Code:** 

**NEB** 

Received by:

01/14/19

7:30

Rush Request:

Standard

Analyzed by:

SW

see "By" below

01/14/19

15:06

P.O.#:

22403

**Laboratory Data** 

SDG ID: GCC28401

Phoenix ID: CC28403

Project ID:

PATRIOT BEVERAGES

Client ID:

**EFFLUENT GRAB-1** 

RL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Chlorine Residual	0.03	0.02	mg/L	1	01/14/19 18:33	0	SM4500CLG-97
pH	8.61	1.00	pH Units	1	01/15/19 03:54	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

### **Comments:**

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Shiller, Laboratory Director

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

### **Analysis Report**

January 18, 2019

FOR:

**Custody Information** 

\_aboratory Data

Attn: Ms. Kim Wills New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

**WASTE WATER** 

Date

Time

**Location Code:** 

Matrix:

P.O.#:

NEB

Collected by:

01/14/19

8:50

Received by:

SW

01/14/19

15:06

Rush Request:

Standard

22403

Analyzed by:

see "By" below

SDG ID: GCC28401

Phoenix ID: CC28404

Project ID: Client ID:

SRCF LAB WATER C39-1125

PATRIOT BEVERAGES

DL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference	
Aluminum	0.010	0.005	mg/L	1	01/16/19	TH	E200.7	
Cadmium	< 0.0001	0.0001	mg/L	1	01/16/19	RS	SM3113B	
Copper	< 0.0010	0.0010	mg/L	ñ	01/16/19	CPP	E200.7	
Hardness (CaCO3)	50.3	0.1	mg/L	1	01/18/19		E200.7	
Nickel	< 0.001	0.001	mg/L	1	01/16/19	CPP	E200.7	
Lead	< 0.0003	0.0003	mg/L	1	01/16/19	RS	SM3113B	
Zinc	0.002	0.002	mg/L	1	01/16/19	CPP	E200.7	
Alkalinity-CaCO3	44.2	5.00	mg/L	1	01/15/19	RR/EG	SM2320B-11	
Conductivity	177	5.00	umhos/cm	1	01/15/19	RR/EG	SM2510B-11	
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	01/15/19	KDB	E350.1	
Нq	8.08	1.00	pH Units	3	01/15/19 04:00	RR/EG	SM4500-H B-11	
Tot. Org. Carbon	< 0.50	0.50	mg/L	1	01/15/19	RWR	SM5310B-11	
Total Metals Digestion	Completed				01/15/19	AG		

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

### **Comments:**

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

## QA/QC Report

January 18, 2019

### QA/QC Data

SDG I.D.: GCC28401

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 463425 (mg/L), QC Sample No: CC29016 (CC28401, CC28402, CC28404)														
Cadmium - Water	BRL	0.0001	< 0.0001	<0.0001	NC	109			107			75 - 125	20	
QA/QC Batch 463425 (mg/L), Q	C Sam	ole No: C	CC29016	(CC284	01, CC	28402,	CC2840	04)						
Lead (Furnace) - Water	BRL	0.001	< 0.0003	< 0.001	NC	99.7			98.2			75 - 125	30	
QA/QC Batch 463412 (mg/L), QC Sample No: CC28192 (CC28401, CC28402, CC28404)														
ICP Metals - Aqueous														
Aluminum	BRL	0.0050	1.71	1.63	4.80	101			>130			75 - 125	20	m
Copper	BRL	0.0025	0.068	0.0671	1.30	99.6			103			75 - 125	20	
Nickel	BRL	0.0005	0.003	0.0031	NC	102			98.0			75 - 125	20	
Zinc	BRL	0.0020	0.127	0.123	3.20	101			96.1			75 - 125	20	

m = This parameter is outside laboratory MS/MSD specified recovery limits.



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# QA/QC Report

January 18, 2019

# QA/QC Data

SDG I.D.: GCC28401

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463338 (mg/L), Q	C Samp	le No:	CC27856	(CC284	01)								
Tot. Diss. Solids Comment:	BRL	10	2100	2000	4.90	105						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	e range 7	75-125%								
QA/QC Batch 463353 (mg/L), Q	C Samp	le No:	CC28229	(CC284	01, CC	28402,	CC2840	04)					
Alkalinity-CaCO3 Comment:	BRL	5.00	81	81	NC	109						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	e range 7	75-125%								
QA/QC Batch 463361 (umhos/c	m), QC	Sample	e No: CC2	8229 (C	C28401	I, CC28	8402, C	C28404	)				
Conductivity Comment:	BRL	5.00	447	453	1.30	97.4						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	e range 7	<b>'</b> 5-125%.								
QA/QC Batch 463349 (pH), QC	Sample	No: Co	C28229 (C	CC28402	2, CC28	403, C	C28404	)					
pH			7.71	7.78	0.90	97.5						85 - 115	20
Comment:													
Additional: LCS acceptance range			•										
QA/QC Batch 463339 (mg/L), Q													
Total Solids Comment:	BRL	10	1500	1500	0	99.0						85 - 115	20
Additional: LCS acceptance range	is 85-115	5% MS	acceptance	range 7	5-125%.								
QA/QC Batch 463619 (mg/L), Q	C Samp	le No:	CC29528	(CC284	02, CC	28404)							
Total Organic Carbon Comment:	BRL	1.0	2.5	2.4	NC	104			92.0			85 - 115	20
Additional: LCS acceptance range	is 85-115	5% MS	acceptance	range 7	5-125%.								
QA/QC Batch 463289 (mg/L), Q	C Samp	le No:	CC27863	(CC284	01, CC2	28402,	CC2840	04)					
Ammonia as Nitrogen	BRL	0.05	0.41	0.40	2.50	101			90.8			90 - 110	20
QA/QC Batch 463295 (mg/L), Q	C Samp	le No:	CC28179	(CC284	03)								
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	103							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

I.CSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis/Shiller, Laboratory Director

January 18, 2019

Friday, January 18, 2019 Criteria: None

# Sample Criteria Exceedances Report GCC28401 - NEB

State:	MA						RL	Analysis
SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	Criteria	Units

<sup>\*\*\*</sup> No Data to Display \*\*\*

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 9 of 11

38 of 65 NEB Issued: 2/6/19



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



# **Analysis Comments**

January 18, 2019

SDG I.D.: GCC28401

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

800 000

Temp → Pg of  Data Delivery (check one);    Fax #  X  Email: kimberly wills@qza.com  Format:   Excel     Poff     Gis. Kev	603 9560 169	100 100 100 100 100 100 100 100 100 100				Itements for CT Res. Criteria GW-1 GW Protection GA Mobility GB Mobility SV Protection Res. Vol. Ind. Vol.  Ind. Vol.
CHAIN OF CUSTODY RECORD 587 East Middle Tumpike, P.O. Box 370, Manchester, CT 06040 Email: service@phoenixlabs.com Fax (860) 645-0823 Client Services (860) 645-8726	Fatriot Beverages () Kim Wills	State of the last		XX XX XX XX	× × × × × × × × × × × × × × × × × × ×	
Carrow.	Project:	Analy Requ	Vsolid O=other Sample Date Time	Www	X X 0580 X X X 0500 X X X	Rejinquished by:    Comments   Co
PHOENIX Environmental Laboratories, Inc.	Customer: New England Bioassay Address: 77 Batson Drive Manchester, CT 06042	Client Sample - Information - Identification Sampler's Signature	water WW=wastewater sater SL=sludge	Sample # Identification   2840   Effluent # 193   193	28404 SRCE lab water (esq-1125)	Relinquished by:  Comments, Special Requirements or Regulations:  Please see detection limits (MLs) listed next to each parameter  CA - 0,0005 mg (L; R - 0,0005 mg (N; - 0,0005 mg (L; H - 0,0005 mg (L; H - 0,0005 mg (L; H - 0,000 mg (L; H - 0,000 mg (L; H - 0,000 mg (M; - 0,0



Tuesday, January 22, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES MA

**SDG ID:** GCC30207

Sample ID#s: CC30207 - CC30209

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis/Shiller

**Laboratory Director** 

NELAC - #NY11301 CT Lab Registration #PH-0618 MA Lab Registration #M-CT007

ME Lab Registration #CT-007 NH Lab Registration #213693-A,B NJ Lab Registration #CT-003 NY Lab Registration #11301 PA Lab Registration #68-03530

RI Lab Registration #63

UT Lab Registration #CT00007 VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# Sample Id Cross Reference

January 22, 2019

SDG I.D.: GCC30207

Project ID:

PATRIOT BEVERAGES MA

Client Id	Lab Id	Matrix
EFFLUENT-2 EFF-C39-1154	CC30207	WASTE WATER
RECEIVING WATER-2 C39-1155	CC30208	WASTE WATER
EFFLUENT GRAB-2	CC30209	WASTE WATER



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

**Analysis Report** 

January 22, 2019

FOR:

Attn: Ms. Kim Wills

New England Bioassay a Division of GZA GeoEnvironmental

77 Batson Drive

see "By" below

Manchester, CT 06040

Sample Information

**WASTE WATER** 

**NEB** 

Location Code: Rush Request:

Standard

P.O.#:

Matrix:

22403

**Custody Information** 

aboratory Data

Collected by: Received by:

Analyzed by:

01/16/19 01/16/19

Date

7:00 16:24

Time

SDG ID: GCC30207

Phoenix ID: CC30207

Project ID:

PATRIOT BEVERAGES MA

Client ID:

EFFLUENT-2 EFF-C39-1154

RL/

Parameter **PQL** Result Units Ammonia as Nitrogen 0.07 0.05 mg/L

Dilution Date/Time 1 01/18/19

By Reference

KDB E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

#### **Comments:**

If there are any questions regarding this data, please call Phoenix Client Services. This report must not be reproduced except in full as defined by the attached chain of custody.

Shiller, Laboratory Director

January 22, 2019

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# **Analysis Report**

January 22, 2019

FOR:

Attn: Ms. Kim Wills New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

Custody Information

Date

Time

Matrix:

WASTE WATER

Collected by:

01/16/19

7:00

Location Code:

**NEB** 

Received by:

SW

01/16/19

16:24

Rush Request:

Analyzed by:

see "By" below

P.O.#:

Standard 22403

aboratory Data

SDG ID: GCC30207 Phoenix ID: CC30208

PATRIOT BEVERAGES MA

Project ID: Client ID:

**RECEIVING WATER-2 C39-1155** 

Parameter

RL/ Result

**PQL** Units

Dilution

Date/Time

Reference

Ammonia as Nitrogen

< 0.05 0.05

mg/L

01/18/19

KDB

E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

## Comments:

If there are any questions regarding this data, please call Phoenix Client Services. This report must not be reproduced except in full as defined by the attached chain of custody.

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# **Analysis Report**

January 22, 2019

FOR:

Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

**Custody Information** 

Date

Time

Matrix:

WASTE WATER

Collected by:

7:00

Location Code:

**NEB** 

Received by:

01/16/19 01/16/19

16:24

Rush Request:

Analyzed by:

see "By" below

P.O.#:

Standard 22403

.aboratory Data

SDG ID: GCC30207

Phoenix ID: CC30209

Project ID:

PATRIOT BEVERAGES MA

Client ID:

**EFFLUENT GRAB-2** 

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Chlorine Residual	0.02	0.02	mg/L	1	01/16/19 20:03	0	SM4500CLG-97
pН	8.65	1.00	pH Units	1	01/17/19 06:29	RWR	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

#### **Comments:**

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Shiller, Laboratory Director

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# QA/QC Report

January 22, 2019

# QA/QC Data

SDG I.D.: GCC30207

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 463766 (pH), (	QC Sample	No: C	C29968 (C	C30209	3)								
pН			7.53	7.58	0.70	97.6						85 - 115	20
Comment:													
Additional: LCS acceptance ra	nge is 85-11	5% MS	acceptance	erange 7	<b>'</b> 5-125%								
QA/QC Batch 463844 (mg/L)	, QC Samp	ole No:	CC29966	(CC302	07, CC	30208)							
Ammonia as Nitrogen	BRL	0.05	<0.10	<0.10	NC	95.5			91.5			90 - 110	20
QA/QC Batch 463631 (mg/L)	, QC Samp	ole No:	CC29656	(CC302	09)								
Chlorine Residual	BRL	0.02	< 0.02	<0.02	NC	100							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis Shiller, Laboratory Director

January 22, 2019

Tuesday, January 22, 2019

Criteria: None

State: MA

# Sample Criteria Exceedances Report

GCC30207 - NEB

Analysis Units Phoenix Analyte Criteria SampNo Acode

\*\*\* No Data to Display \*\*\*

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 7 of 9

RL

47 of 65 NEB Issued: 2/6/19



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823



# **Analysis Comments**

January 22, 2019

SDG I.D.: GCC30207

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

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I			28	7 East Middle	rumpike, P.O. Box	2	0	Fæ.		1
	W 1714			Email: service	Email: service@phoenixlabs.com	n Fax (860) 645-0823		X Email: k	X Email: kimberly.wills@gza.com	
Environm	Environmental Laboratories,	, Inc.		Clien	t Services (8	Client Services (860) 645-8726	,	Format:	☐ Excel ☐ Pdf [	Gis Key
Customer: Ne	Customer: New England Bioassay			Project:	of Patron	of Generages	(00)	N - 23	22403	
Address: 77	77 Batson Drive		1	Repo	Report to: Kim Wills	8	)	(1)	860-643-9560	
M	Manchester, CT 06042			Invoic	Invoice to: Kim Wills			Fax #: 86	860-646-7169	
	Client Sample - Information - Identification	- Identification			\	1 18			1 / 100	
Sampler's Signature		ote C		Analysis Request	is st	Michol		18 45°	1000	/
		Calo		-	/	11/1/2011	/			1400 14000
Matrix Code: DW=drinking water GW=groundwater	r WW=wastewater S=soil/solid SL=sludge A=air	solid O=other			TO REPORT	Total Total				80 1 100 1 1 100 1 1 1 100 1 1 1 1 1 1 1
Phoenix Sample #	Customer Sample Identification	Sample Date Matrix Sampled		Pally	A ROS		\$207.10°		\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Se State
3000 J	Effluent-2		0000 1	×					1	
30208	Receiving Water-2	P1 19111 0	9 000 P	×					-	
30209	Effluent Grab - 2	41011	19 0700	×	×			-		
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	LV-039-1155									
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Poisons showing	Pormoranto Canada Domingamento de Dominatione					Standard	GB Mobility	GB Mobility	 □ [	
comments, opening	nequilence of regulations.	9					Res. Vol.	olection /ol.	3 3 1□1	
Please see detection	Please see detection limits (MLs) listed next to each parameter above	h parameter above				* Surcharge Applies		ਰਂ	orther	MCP Certification Other
i		(								
Please CC: Melanie	Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports	NIK(@gza.com on rep	STO							



Tuesday, January 22, 2019

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES

**SDG ID:** GCC32049

Sample ID#s: CC32049 - CC32051

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis/Shiller

**Laboratory Director** 

NELAC - #NY11301

CT Lab Registration #PH-0618

MA Lab Registration #M-CT007

ME Lab Registration #CT-007

NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003 NY Lab Registration #11301 PA Lab Registration #68-03530

RI Lab Registration #63

UT Lab Registration #CT00007

VT Lab Registration #VT11301



Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

# Sample Id Cross Reference

January 22, 2019

SDG I.D.: GCC32049

Project ID:

**PATRIOT BEVERAGES** 

Client Id	Lab Id	Matrix
EFFLUENT 3 C39-1187	CC32049	WASTE WATER
RECEIVING WATER 3 C39-1188	CC32050	WASTE WATER
EFFLUENT GRAB 3	CC32051	WASTE WATER



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# **Analysis Report**

January 22, 2019

FOR:

Attn: Ms. Kim Wills

**New England Bioassay** 

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

Time

Matrix:

**WASTE WATER** 

Collected by:

Date 01/18/19

7:00

Location Code:

**NEB** 

Received by:

LB

01/18/19

15:57

Rush Request:

Analyzed by:

see "By" below

SDG ID: GCC32049

P.O.#:

Standard 22403

aboratory Data

**Custody Information** 

Phoenix ID: CC32049

Project ID: Client ID:

Parameter

PATRIOT BEVERAGES

**EFFLUENT 3 C39-1187** 

RL/

Dilution

Reference

Result

**PQL** 

Units

Date/Time

Ammonia as Nitrogen

< 0.05 0.05 mg/L

01/22/19

KDB

By

E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

#### **Comments:**

If there are any questions regarding this data, please call Phoenix Client Services. This report must not be reproduced except in full as defined by the attached chain of custody.

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# **Analysis Report**

January 22, 2019

FOR:

Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

WASTE WATER

**Custody Information** 

Date

Time

Matrix:

Collected by:

01/18/19

7:30

**Location Code:** 

**NEB** 

Received by:

LB

01/18/19

15:57

Rush Request:

Analyzed by:

see "By" below

SDG ID: GCC32049

P.O.#:

Standard 22403

**Laboratory Data** 

Phoenix ID: CC32050

Project ID:

PATRIOT BEVERAGES

Client ID:

**RECEIVING WATER 3 C39-1188** 

RL/ Parameter **PQL** Result

Units Dilution Date/Time

Reference

Ammonia as Nitrogen

< 0.05 0.05 mg/L

1 01/22/19

KDB E350.1

By

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

#### **Comments:**

If there are any questions regarding this data, please call Phoenix Client Services. This report must not be reproduced except in full as defined by the attached chain of custody.

January 22, 2019

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# **Analysis Report**

January 22, 2019

FOR:

Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information

Custody Information

Date

Time

Matrix:

WASTE WATER

Collected by:

01/18/19

7:00

Location Code:

**NEB** 

Received by:

LB

01/18/19

15:57

Rush Request:

Standard

Analyzed by:

see "By" below

SDG ID: GCC32049

P.O.#:

22403

aboratory Data.

Phoenix ID: CC32051

Project ID: Client ID:

PATRIOT BEVERAGES

**EFFLUENT GRAB 3** 

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Chlorine Residual	0.04	0.02	mg/L	1	01/18/19 20:28	0	SM4500CLG-97
pН	8.49	1.00	pH Units	1	01/19/19 00:19 F	RWR/KI	DBSM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

#### **Comments:**

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Shiller, Laboratory Director

Reviewed and Released by: Greg Lawrence, Assistant Lab Director



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

# QA/QC Report

January 22, 2019

# QA/QC Data

SDG I.D.: GCC32049

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 464067 (pH), QC	Sample	No: C	C32054 (0	C3205	1)								
pН				7.87		97.4						85 - 115	20
QA/QC Batch 464202 (mg/L), 0	QC Samp	le No:	CC31287	(CC320	49)								
Ammonia as Nitrogen	BRL	0.05	0.10	0.11	NC	101			97.2			90 - 110	20
QA/QC Batch 464221 (mg/L), 0	QC Samp	le No:	CC31348	(CC320	50)								
Ammonia as Nitrogen	BRL	0.05	35.6	35.7	0.30	97.3			98.5			90 - 110	20
Comment:													
TKN is reported as Organic Nitrog	gen in the	Blank, l	CS, DUP	and MS.									
QA/QC Batch 464032 (mg/L), 0	QC Samp	le No:	CC32185	(CC320	51)								
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	103							

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis Shiller, Laboratory Director

January 22, 2019

Tuesday, January 22, 2019

#### Sample Criteria Exceedances Report GCC32049 - NEB

Criteria: None

State: CT

SampNo

Phoenix Analyte

Criteria

Result

Criteria

RL Criteria

Analysis Units

Acode

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 7 of 9

56 of 65 NEB Issued: 2/6/19

<sup>\*\*\*</sup> No Data to Display \*\*\*



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



# **Analysis Comments**

January 22, 2019

SDG I.D.: GCC32049

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

33

Temp A:\ Pg of Data Delivery (check one):    Fax #     Fax #     Fmail: kimberly wils@gza.com     Format:   Excel   Pdf   Gis Key	9560	Tiggi India		Requirements for MA   Requirements for MA   Res. Criteria   GW-1   GW-2   GW-3   GW-
DY RECORD 370, Manchester, CT 06040 Fax (860) 645-0823 60) 645-8726				Turnaround:    1 Day*   Res. Criteria   CW Protection   CA Mobility   CA Mobility   CA Surcharge Applies   CA Surcharge Applies   CA Mobility   CA CA Mobility   CA
CHAIN OF CUSTODY RECORD 587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Email: service@phoenixlabs.com Fax (860) 645-0823 Client Services (860) 645-8726	Project: Letrical Report to: Kim Wills Invoice to: Kim Wills	Analysis Request Capatril Capatril	Time Sampled CT0C/100 X COT0C/100 X X X X X X X X X X X X X X X X X X	
IX Social	Bioassay e 06042		A=air  Sample Matrix Sampled  WW   17-15   19  MU	Relinquished by:  Relinquished by:  Comments, Special Requirements or Regulations:  Please see detection limits (MLs) listed next to each parameter above
PHOENIX Environmental Laboratories, Inc.	Customer: New England Bioassay Address: 77 Batson Drive Manchester, CT 06042	Client Sample - Info Sampler's Signature  Matrix Code: DWE-drinking upper	GW=groundwater SL=sludge   Phoenix Sample #   Identification   32049   Effluent-23   32050   Receiving Water-23   32050   Effluent Grab - 23	Relinquished by: Relinquished by: Comments, Special Requirements or Regulations: Please see detection limits (MLs) listed next to each parameter above

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# SAMPLE RECEIPT CHEMISTRY & CHAIN OF CUSTODY DOCUMENTS

59 of 65 NEB Issued: 2/6/19

## **NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA**

PERMITTEE:	Patriot Beverages	
NEB JOB #	05.0044697.00	

DATE RECEIVED	1/14/19		1/10	6/19	1/18/19		
SAMPLE TYPE:	EFF #1	BROOK #1	EFF #2 BROOK #2		EFF #3 BROOK #:		
COC#	C39-1123	C39-1124	C39-1154	C39-1155	C39-1187	C39-1188	
pH (SU)	8.2	6.3	8.2 6.6		8.3	6.5	
Temperature (°C)	1.1	0.4	2.7	1.6	2.8	1.5	
Dissolved Oxygen (mg/L)	11.5	9.9	12.3	11.7	11.8	11.4	
Conductivity (µmhos)	2,439	196	2,542	206	2,600	192	
Salinity (ppt)	1	<1	1	<1	1	<1	
TRC - DPD (mg/L)	0.029	0.001	0.052	0.007	0.036	0.008	
TRC - Amperometric (mg/L)	NA	NA	<0.05	NA	NA	NA	
Hardness (mg/L as CaCO <sub>3</sub> )	102	46	86	32	100	34	
Alkalinity (mg/l as CaCO <sub>3</sub> )	1,010	20	1,045	25	1,070	20	
Tech Initials	ко	КО	ТВР	ТВР	PD	PD	

NOTE: NA = NOT APP	PLICABLE		
	//		
Data Reviewed By:	1/5	Date Reviewed:	2/6/9

NEW ENGLAND BIOASSAY	7 - CHAIN-OF-CUSTODY
Sampler: Sumple Set #/ Sampler: MIRAPAU  Title: CHEF OPENATON WUTP  Facility: Patriot Beverages	RECEIVING WATER  Sampler:  Title:   Facility:   Patriot Beverages
Sampling Method: X Composite  Sample ID: OUTPAL OO    Start Date: 1 19 9 Time: 0730  End Date: 0730	Sampling Method: X Grab  Sample ID: Reedy Meadow Brook  Date Collected: 114119  Time Collected: 5700
Sampling Method: X Grab (for pH and TRC only X )  Date Collected: 11419  Time Collected: 2730	
Sample Type:  Prechlorinated Dechlorinated Unchlorinated Chlorinated	
Effluent Sampling Location and Procedures:	
Receiving Water Sampling Location and Procedures:	
Requested Analysis: X Chronic and modified acute  Sample Sh	ipment
36	
Method of Shipment: NEB Courier  Relinquished By: Date: Received By: Date: Dat	1/14/19 Time: 0333 1/14/19 Time: 0333 1/14/19 Time: 1135
Optional Inf	ormation
Purchase Order # to reference on invoice:	Received ON ICE
FOR NEB US	SE ONLY
* Please return all ice packs NEB has provided to insure ac	curate temperature upon receipt to the NEB laboratory.
	mperature of Receiving Water Upon Receipt at Lab: O· $+ \circ$ C

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042 61 of 65

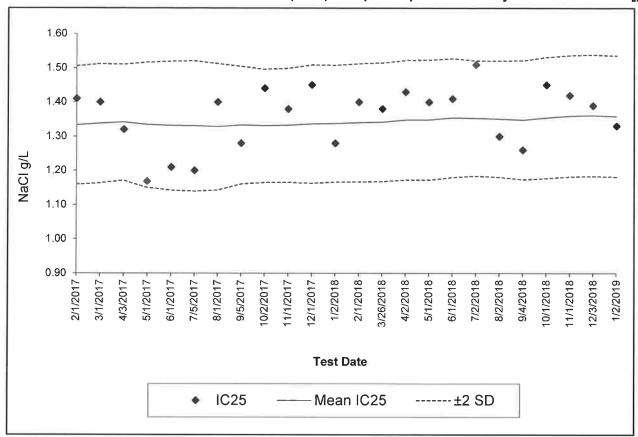
NEW ENGLAND BIOASSAY	Y - CHAIN-OF-CUSTODY
EFFLUENT Sampler: Sample Set # 3	RECEIVING WATER Sampler:
Title: CMO CHANTOR WUTT	Title: CHIEF OPENIAM WWY
Facility: Patriot Beverages	Facility: Patriot Beverages
Sampling Method:         X         Composite           Sample ID:         OVTRUCOT           Start Date:         1/15/19         Time:         0700           End Date:         1/16/19         Time:         0700	Sampling Method: X Grab  Sample ID: Reedy Meadow Brook  Date Collected: //16//9  Time Collected: 0730
Sampling Method: X Grab (for pH and TRC only X)  Date Collected: //IG//9  Time Collected: 0700	
	Received
Sample Type:  Prechlorinated Dechlorinated Unchlorinated Chlorinated	ON ICE
Effluent Sampling Location and Procedures:  Receiving Water Sampling Location and Procedures:	
Requested Analysis: X Chronic and modified acute  Sample Sh	nipment
Sample SI	
Method of Shipment:  Relinquished By:  Received By:  Received By:  Date:  Date:  Date:  Date:  Date:	1/16/19 Time: 08/6 Time: 08/6 Time: 08/6 Time: 1/20 Time: 1/47
Optional In	formation
Purchase Order # to reference on invoice: 00 / 6 848	
FOR NEB US	SE ONLY
* Please return all ice packs NEB has provided to insure ac	
Temperature of Effluent Upon Receipt at Lab: 2.7 °C Temperature	mperature of Receiving Water Upon Receipt at Lab: /, 💪 °C
Effluent COC# <u>C39 - 1153</u> Re	eceiving Water COC#

NEW ENGLAND BIOASSAY	Y - CHAIN-OF-CUSTODY
Sampler: Jun Drippen  Title: Chief openion work  Facility: Patriot Beverages	Sampler: Sam
Sampling Method: X Composite  Sample ID: OUTFALL OO Start Date: 1/18/19 Time: 0700  End Date: 1/18/19 Time: 0700	Sampling Method: X Grab  Sample ID: Reedy Meadow Brook  Date Collected: 1/18/19  Time Collected: 0720
Sampling Method: X Grab (for pH and TRC only X )  Date Collected: /// 8//9  Time Collected:	
Sample Type:  Prechlorinated Dechlorinated Unchlorinated Chlorinated	Received ON ICE
Effluent Sampling Location and Procedures:	
Receiving Water Sampling Location and Procedures:	
Requested Analysis: X Chronic and modified acute  Sample SI	ipment
Method of Shipment:	1/18/19 Time: 0940 1/18/19 Time: 0940 1/18/19 Time: 1345 1/18/19 Time: 1345
Optional In	formation
Purchase Order # to reference on invoice: 00 16848	
FOR NEB U	
* Please return all ice packs NEB has provided to insure ac	curate temperature upon receipt to the NEB laboratory.
	mperature of Receiving Water Upon Receipt at Lab: \.\5 \cdot \cdot \C} eceiving Water COC# \.\C39 - \ \88

# REFERENCE TOXICANT CHARTS

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New England Bioassay
Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC<sub>25</sub>



Test ID	Date	IC <sub>25</sub>	Mean IC <sub>25</sub>	STD	-2STD	+2STD	Avg. CV	Growth PMSD (%)	Avg. PMSD (%)
17-152	2/1/2017	1.41	1,33	0.09	1.16	1.51	0.06	9.65	9.27
17-268	3/1/2017	1.40	1.34	0.09	1,16	1.51	0.06	20.53	10.07
17-481	4/3/2017	1.32	1.34	0.08	1.17	1.51	0.06	7.47	9.90
17-617	5/1/2017	1.17	1.33	0.09	1.15	1.52	0.07	10.74	9.95
17-765	6/1/2017	1.21	1.33	0.09	1.14	1.52	0.07	7.41	9.80
17-973	7/5/2017	1.20	1.33	0.09	1.14	1.52	0.07	10.39	9.83
17-1147	8/1/2017	1.40	1,33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1,28	1.33	0.09	1.16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1,33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1.17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1,17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1.41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83
18-1104	8/2/2018	1.30	1.35	0.08	1.18	1.52	0.06	9.21	10.63
18-1316	9/4/2018	1.26	1.35	0.09	1.18	1.52	0.06	11.89	10.84
18-1512	10/1/2018	1.45	1.36	0.09	1.18	1.53	0.06	8.61	10.76
18-1626	11/1/2018	1.42	1.36	0.09	1.18	1.54	0.06	9.48	10.87
18-1757	12/3/2018	1.39	1.36	0.09	1.18	1.54	0.06	9.70	10.95
19-9	1/2/2019	1.33	1,,36	0.09	1.18	1.54	0.07	8.91	11.06

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45 PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%